U.S. Department of Energy

Integrated Safety Management System

Grand Junction Office

Integrated Safety Management System Description

12 June, 2000

Prepared for
U.S. Department of Energy
Albuquerque Operations Office
Grand Junction Office

Prepared by
MACTEC–ERS, L.L.C.,
and *WASTREN, Inc.*,
Grand Junction, Colorado

Under DOE Contract number
DE–AC13–96GJ87335
and DE–AC13–96GJ87460

GJO 10

Control Number _____

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Integrated Safety Management System Description

Technical Assistance and Remediation Contract Facility Operations and Support Contract

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Work Performed Under DOE Contract Number
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GJO ISMS Commitment

MACTEC-Environmental Restoration Services, LLC (Technical Assistance and Remediation Contractor) and *WASTREN, Inc*. (Facility Operations and Support Contractor) are committed to systematically integrating environment, safety and health into management and work practices at all levels so that the U.S. Department of Energy, Grand Junction Office (DOE–GJO) mission is accomplished while protecting the workers, the public, and the environment. The Integrated Safety Management System (ISMS) described in this document is applicable to all DOE–GJO activities. Fundamental to the attainment of the goals of ISMS are personal commitment and accountability, open communications, continuous improvement, employee involvement, and line management responsibility for safety and environmental protection. All personnel are empowered to identify potential hazards or unsafe conditions to management and, if necessary, to suspend work activities if warranted for the prevention of injuries or accidents.

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1.0 Introduction

U.S. Department of Energy (DOE) has directed the DOE operation field offices and contractors to develop and implement a Safety Management System. The objective of the Safety Management System is to **"Do Work Safely"** and to ensure the protection of workers, the public, and the environment. This is accomplished through the effective integration of environment, safety, and health management into all facets of work planning and execution. To support this objective, DOE has issued DOE Policy (P) 450.4, *Safety Management System Policy;* DOE P 450.5, *Line Environment, Safety and Health Oversight;* and DOE P 450.6, *Secretarial Policy Statement, Environment, Safety, and Health.* This document describes the Integrated Safety Management System (ISMS) for the Technical Assistance and Remediation (TAR) contractor and the Facility Operations and Support (FOS) contractor for the DOE Grand Junction Office (DOE–GJO). This ISMS is implemented in accordance with DOE–GJO contract requirement. For the purposes of integrated safety management, the definition of safety encompasses safety and health, and environment including pollution prevention and waste minimization.

1.1 Purpose and Scope

The purpose of this TAR contractor and FOS contractor Integrated Safety Management System Description is to provide a summary of the TAR contractor and FOS contractor mechanisms that implement ISMS and to provide reference to those documents. It is intended for use by TAR and FOS contractor personnel to understand the various mechanisms and how they implement the DOE ISMS guiding principles and core functions (see *Integrated Safety Management System, section 3.0*) and to ensure that environment, safety, and health (ES&H) considerations are integrated into work planning and execution at all levels. This ISMS Description does not contain requirements. *Table 1. TAR and FOS Contractor Implementing Manuals lists the documents that implement the ISMS.*

GJO is currently classified as a below low hazard, nonnuclear, nonreactor facility. The activities conducted and the facilities operated by the TAR contractor and FOS contractor are similar to those found in industry and commerce and are categorized as

- Business occupancy
- Standard industrial hazard
- Low hazard nonnuclear

The ISMS is applied to all work performed under the TAR contract and FOS contract. **Because DOE–GJO work ranges in complexity and risk, the processes and mechanisms identified in this ISMS Description are applied on a graded approach.** This allows flexibility in planning, analysis and controls for work, while continuously ensuring that workers, the public and environment are protected. The TAR and FOS contractors are responsible for implementation of the ISMS regardless of who performs the work. The ISMS is to be applied by subcontractors, vendors, and temporary employees.

The TAR and FOS managers' commitment to protecting workers, public, and the environment is amplified in the GJO Health and Safety Standards (Manual GJO 2), Section 1.1, *Health and Safety Protection*. Manual GJO 2 states the policy of the TAR and FOS contractors is to conduct all operations safely and to maintain all exposures to ionizing radiation as low as reasonably achievable. The TAR and FOS contractors are committed to providing a safe working environment for all employees, subcontractors, vendors and temporary personnel through the evaluation and control of hazards. The TAR contractor *Environmental Compliance Manual* (MAC-1001) and FOS contractor *Environmental Quality Plan* state the respective commitments to environmental excellence.

1.2 Technical Assistance and Remediation Contract and Facility Operations and Support Contract and Work Relationships

DOE–GJO has entered into cost-plus-award-fee contracts with MACTEC-Environmental Restoration Services, L.L.C. for Technical Assistance and Remediation and *WASTREN, Inc*. for Facility Operations and Support. The TAR contractor provides the management, labor, materials, supervision and administration to complete environmental management and restoration tasks as assigned by DOE. The FOS contractor provides the management, labor, materials, services, supervision, and administration to manage DOE–GJO site facilities, which include buildings and infrastructure, equipment, operations, scientific laboratory services, technical training, and environmental remediation of the GJO site. Collectively, these firms support the DOE–GJO mission to provide the scientific, technical, engineering, and project integration skills to support national environmental restoration, geophysical, and energy programs.

The TAR and FOS contractors apply a common set of upper level GJO manuals that define the processes for execution of their contracts and tasks. Lower tier documents are developed as needed by the TAR and FOS contractors to provide guidance specific to their activities.

Environment, safety and health requirements are provided to subcontractors in accordance with the TAR and FOS contracts. GJO Quality Assurance Standards (Manual GJO 1), Criterion 7, "*Procurement*", and GJO Health and Safety Standards (Manual GJO 2), Section 1.3, "*Construction Subcontractor Health and Safety*", establish requirements for procurement. Manual GJO 1, Criterion 7, addresses procurement planning and approval, and evaluation of suppliers. Manual GJO 2, Section 1.3, states the TAR and FOS contractors expectations for construction subcontractor safety and health. Basic requirements for hazard analysis, health and safety planning, worker involvement, workplace inspections, and hazard abatement are stated. The GJO Construction Procedures Manual (Manual GJO 5), Section 3.1, "*Bid Package*" describes the requirements for preparing remedial action construction bid packages. Manual GJO 5, Section 3.1, requires support from quality assurance, health and safety, and environmental programs, in addition to the engineering and project planning organizations.

The FOS contractor is responsible for control and distribution of the GJO manuals, including this ISMS Description. Revisions to the ISMS and this Description may occur as the adequacy and effectiveness of the ISMS is reviewed and assessed as part of the feedback and improvement process. Revisions also are made to reflect changes in mission, program objectives and budget direction from DOE-GJO. ISMS and Description revisions are scheduled with the DOE-GJO

contracting officer. Changes to this ISMS Description require General Manager's approval of both the TAR contractor and FOS contractor.

DOE prioritizes projects and programs required to accomplish mission. The DOE requests of the Contractor specific Task Order Plans to accomplish those mission requirements.

The Contractor prioritizes the subtasks, including specific requirements for project execution, administration, training and safety. The Contractor submits a proposed Task Order Plan for negotiation in response to DOE's Task Order direction.

DOE authorizes the Contractor to perform work on those projects and programs after successful negotiation and signature of the Task Order. This authorization allows the Contractor to begin expenditure of funds to accomplish the desired task consistent with the approved scope, schedule and cost. This authorization may also contain clauses related to review of interim submittals (planning documents, procurement technical specifications, work readiness reviews, etc) prior to the projects inception.

Upon DOE approval of the Task Order Plan, the Contractor authorizes their employees, subcontractors and vendors to begin the physical aspects of the DOE approved work after subordinate implementing documentation has been put in place as required by contract or policy. This documentation may be both job-specific (safety analyses, permits, monitoring protocol, etc) and worker-specific requirements.

All workers are authorized to stop work if unsafe conditions arise, or they feel the implementing procedures and/or controls do not address the hazard adequately.

Manuals Shared Jointly by the FOS/TAR Contract	
GJO 1	Quality Assurance Standards
GJO 1a	QA Group Instructions Manual
GJO 2	Health and Safety Standards
GJO 2a	Health and Safety Group Instructions
GJO 3	Site Radiological Control Standards
GJO 4	Training Manual
GJO 5	Construction Procedures Manual
GJO 6	Environmental Procedures Catalog
GJO 8	Emergency Preparedness and Response Plan
PGJPO-1216	Safety Assessment
FOS Contractor Manuals	
FOS 101	Management Policy
FOS 202	Environmental Quality Plan
Standard	Training Program
Standard	Analytical Laboratory Chemical Hygiene Plan
Standard	Contracts & Procurement Standards
Standard	Environmental Compliance Standards and Desk Instructions
Standard	Facility Management Work Control Manual and Desk Procedures
PGJO-1249	Radiation Protection Program Plan
Standard	Calibration Program Standard
Standard	Project Management and Controls Procedures Manual
TAR Contractor Manuals	
MAC 1000	General Administrative Procedures
MAC 1001	Environmental Compliance Manual
MAC 1002	Project Management Control System
MAC 1006	Radiation Protection Program Plan
MAC 1007	Chemical Hygiene Plan
MAC 2012	Drilling Health and Safety Requirements
MAC 3000	Field Services Manual
MAC 3001	Design Engineering Procedures Guidelines
MAC 3006	Environmental Desktop Procedures
MAC 3010	Procurement Manual
MAC 3016	Dosimetry

Table 1. TAR and FOS Contractor Implementing Manuals

2.0 Organizational Structure, Roles and Responsibilities

The basic organizations of the TAR contractor and the FOS contractor are shown on Figure 1. The performance responsibilities of these organizations are established in the TAR contract (DE-AC13-96GJ87335) and the FOS contract (DE-AC13-96GJ87460). Active involvement, communication, and participation of all TAR contractor and FOS contractor employees are crucial to successful ISMS implementation at GJO.

The TAR contractor and FOS contractor General Managers have overall responsibility, authority, and accountability for all aspects of the work performed under the respective contracts, including environmental protection, occupational safety and health, and protection of the public.

Line managers are responsible for all program elements including risk-based management, health and safety, quality assurance, environmental compliance, and ensuring that workers are properly trained. Line managers assign technical leads as deemed necessary to support project activities.

Remedial Action Managers, Supervisors and Lead Personnel who manage or supervise contractor and subcontractor employees performing work constitute the line organization (line management). Line management is responsible for overall management and safe, environmentally protective execution of remedial action projects. Line management is responsible for ensuring that workers are trained to perform the assigned work. Specific responsibilities for these positions are further defined in GJO Health and Safety Standards (Manual GJO 2), Section 1.1, *"*Health and Safety Protection", and Section 3.1, *"Radiation Protection Policy"*, GJO Construction Procedures Manual (Manual GJO 5), Section 1.2, *"Construction Management Roles, Responsibilities and Authority"*, TAR Contractor *Environmental Compliance Manual* (MAC-1001), Section 1.0, *"Policy and Goals"*, and the FOS contractor *Environmental Quality Plan*, Section 3, *Implementation*.

Workers, including lower tier subcontractors, are responsible for following work instructions and procedures and taking precautions to prevent injury to themselves and others. Workers are responsible for performing tasks in accordance with provided training and may not perform tasks for which they have not been adequately trained. Workers also are responsible for expressing safety concerns to line management. Each worker has the right, responsibility, and authority to report unsafe or environmentally unsound conditions or practices and stop work without fear of reprisal.

Additional management, supervisor and worker responsibilities are defined in the contractor-specific manuals, procedures, and instructions.

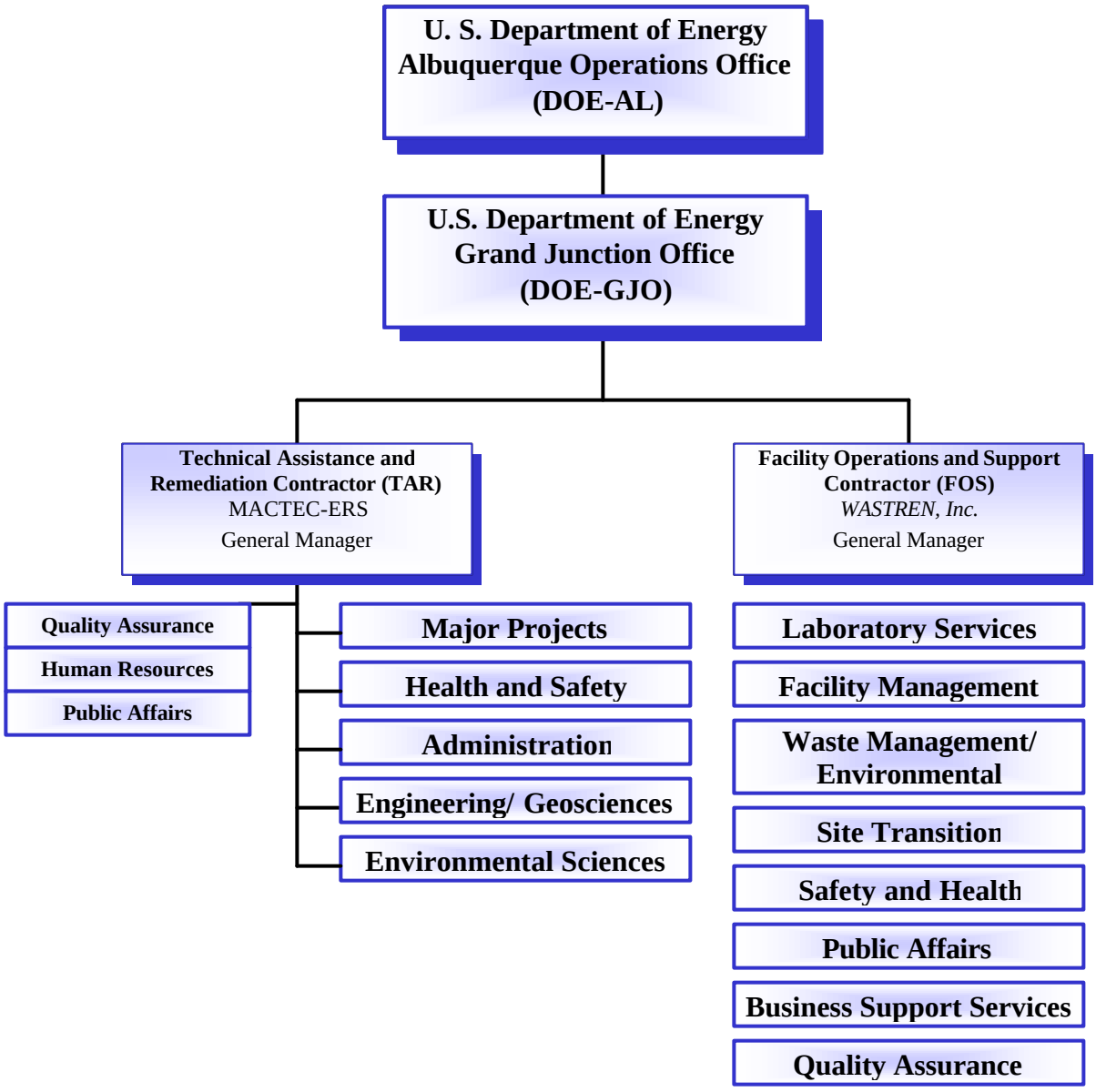

Figure 1. TAR Contractor and FOS Contractor Organizations

TAR contractor and FOS contractor employees receive safety and health training relative to the hazards and risks they routinely encounter in the occupational environment specific to their individual work scopes. GJO Training Manual (Manual GJO 4) establishes training policy for work performed under both the TAR and FOS contracts. Manual GJO 4 provides guidance in the development, implementation, maintenance, and control of the training program. Manual GJO 4, in conjunction with the Training Information System (TIS) database, assists managers and supervisors in determining and updating company and individual training needs. GJO Quality Assurance Standards (Manual GJO 1), Criterion 2, *"Personnel Training and*

Qualification" provides overall standard requirements for personnel training. GJO Construction Procedures Manual (Manual GJO 5), Section 1.3, *"Training"* defines training responsibilities and requirements for remedial action construction. Environmental training requirements are established in the TAR contractor *Environmental Compliance Manual* (MAC-1001), Section 2.4, *"Environmental Training"* and the FOS contractor *Environmental Compliance Standards* (Manual FOS-202), Section 1.2, *Environmental Training*.

Personnel qualifications are stipulated further in position descriptions, work planning documents, applicable standards, work instructions and procedures, and project safety plans. Medical surveillance is provided commensurate with the potential health hazards that may be encountered.

3.0 Integrated Safety Management System

The TAR contractor and FOS contractor ISMS guiding principles and core functions are described in the following sections. These guiding principles and core functions are consistent with the DOE ISMS Policy (DOE P 450.4) and ISMS Guide (DOE G 450.4-1).

3.1 Guiding Principles

The following guiding principles are subscribed to in support of accomplishing the DOE–GJO mission. These guiding principles are attributes (i.e., values) of the ISMS and are achieved through execution of the mechanisms and processes that implement the ISMS.

1. **Line Management Responsibility for Safety and Environmental Performance Defined.** TAR contractor and FOS contractor line management includes any management level within the line organizations that is responsible and accountable for directing and conducting work. Line management includes those managing or supervising workers performing work. Line management is directly responsible for the protection of workers, the public, and the environment. Line management responsibility for safety and environmental performance is stated in GJO manuals and TAR contractor and FOS contractor documents.

2. **Clear Roles and Responsibilities Defined.** Clear and unambiguous lines of authority and responsibility for ensuring ES&H performance expectations are established, documented, and communicated at all organizational and subcontractor levels to achieve effective safety and environmental management. Specific roles and responsibilities are stated in GJO manuals, TAR contractor documents, and FOS contractor documents.

3. **Competence Commensurate with Responsibility.** Personnel possess the experience, knowledge, skills, and abilities necessary to discharge their responsibilities. Minimum requirements for workers are defined in the GJO manuals, TAR contractor documents, FOS contractor documents, and individual position descriptions. The GJO Training manual (Manual GJO 4) provides the training policy for work performed by the TAR contractor and the FOS contractor and affirms the commitment to provide workers with the tools necessary to perform timely, efficient, and quality work in a safe, environmentally protective manner. Manual GJO 4, in conjunction with the Training Information System (TIS) database, assists managers and supervisors in determining and updating company and individual training needs. Line management is responsible for evaluating training needs to ensure that workers are trained to perform the assigned work.

4. **Balanced Priorities.** Resources are allocated effectively to address ES&H, programmatic, and operational considerations. Protecting human health and the environment is a top priority whenever work is planned and performed. The GJO manuals, TAR contractor documents, and FOS contractor documents establish the methods to ensure a proper balance of resources.

5. **Safety and Environmental Standards and Requirements Defined.** Before work is performed, associated hazards are evaluated and an agreed-upon set of ES&H standards and requirements are established that, when properly implemented, provide adequate assurance that workers, the public, and the environment are protected from adverse conditions. The ES&H standards and requirements applicable to the TAR and FOS contractors are specified in their respective contracts. These standards and requirements include federal, state, and local laws and regulations, and specific DOE directives.

6. **Hazard Controls Tailored to Work Performed.** Administrative and engineering controls to prevent and mitigate hazards are tailored to the work being performed and to the associated hazards. The TAR and FOS contractors apply a graded approach to individual work activities based on risk and complexity to implement safe, environmentally protective, and cost-effective work practices. The work planning process considers routine versus non-routine tasks to determine the proper balance of work instructions, worker supervision, and worker skills.

7. **Operations Authorization.** The conditions and requirements to be satisfied for operations to be initiated and conducted are clearly established and agreed upon. The conditions and requirements in the TAR and FOS contracts and approved task orders provide the authorization to operate.

The TAR contractor and FOS Contractor are committed to worker involvement. Workers are actively involved in daily work planning, identifying and analyzing hazards and environmental impacts, and implementing controls. The expectation for worker involvement is stated in GJO manuals. The TAR and FOS contractors apply a team approach that encourages early worker involvement. This direct involvement by workers allows them to share their knowledge and experience which, improves work efficiency and ensures safe work performance. Each worker has the right, responsibility, and authority to report unsafe or environmentally unsound conditions or practices and to stop work without fear of reprisal.

3.2 Core Functions

The following core functions provide the structure through which TAR contractor and FOS contractor ISMS is implemented. These core functions are applied as a continuous cycle with the degree of rigor tailored to the work activity and hazards involved.

3.2.1 Define Scope of Work

The TAR contract (DE-AC13-96GJ87335) and FOS contract (DE-AC13-96GJ87460) define the general scope of work for the two contractors. The TAR contractor provides the management, labor, materials, supervision and administration to complete environmental management and restoration tasks assigned by DOE. The FOS contractor provides the management, labor, materials, services, supervision, and administration to manage DOE–GJO site facilities, which include buildings and infrastructure, equipment, operations, scientific laboratory services, and environmental remediation of the GJO site as assigned by DOE.

Translate Mission into Work

Task orders specifically authorize the broad scope of work defined in the TAR contract and FOS contract. Task orders and DOE directives are the means whereby work is authorized to be performed. The tasks orders define the scope of work to be performed, period of performance, estimated cost and funding, reporting requirements, furnished property, estimated travel, deliverables, performance-based management criteria, and other special provisions that may be required. Draft task orders are sent by DOE–GJO to the TAR and the FOS contractors for development of a technical proposal that includes proposed schedule, cost and performance measures and supporting information.

DOE–GJO issues draft task orders to the TAR contractor and FOS contractor General Managers. A Line Manager is assigned to select a team including ES&H personnel to develop a technical proposal. EH&S personnel evaluate the draft task order to determine what will be necessary to comply with environmental regulations and health and safety requirements for the scope of work. The technical proposal is then submitted and the respective contractor personnel meet with DOE to discuss the technical aspects of the work, performance period, cost, allocation of resources, and ES&H requirements. The task order is revised as necessary based on these discussions and an approved task order is issued. The TAR contractor and FOS contractor General Managers authorize the task order work to begin. Line management and support organizations to include EH&S personnel assist with the development of the work plan within the task orders parameters to initiate the work. EH&S controls are implemented through project specific health and safety plans, project safety plans, and JSA's using a graded approach to identify and control hazards.

GJO manuals and other documents provide information on the administrative and technical planning requirements for programs and activities. Planning is performed to ensure effective and efficient approaches to the performance of assigned work, to produce documented identification of the methods to be used, to specify the sequence of actions to be taken, to determine if procedures must be prepared before work activities are started, to determine resource needs, and to establish schedules for activities. Planning includes compliance with environmental regulations; health and safety requirements, including medical screening, evaluations and examinations; radiological controls; and assignment of personnel. Line managers are responsible for planning the approved work scope. TAR contractor and FOS contractor ES&H personnel participate in task order planning to ensure that resources are properly balanced. Life cycle planning is performed for major projects to identify ES&H issues on a long term basis.

After submittal of a technical proposal, DOE and the TAR contractor or FOS contractor meet to discuss the technical aspects of the work, performance period, cost, and allocation of resources. The task order is revised as necessary based on these discussions. An approved task order is subsequently issued to the contractor to commence work. TAR contractor manual, *Project Management Control System* (Manual MAC 1002), and FOS contractor manual, *Project Management and Controls Procedures Manual* (Standard), address the procedure for development of the technical proposal and the subsequent monitoring of the approved task order schedule, cost, and performance measures.

Although all work is to be completed in a timely manner, priorities are given to tasks that correct conditions that compromise the safety of employees, the public, the environment or DOE–GJO.

Set Expectations

Performance objectives, measures, and expectations in the form of task order deliverables, are established and evaluated semiannually for the TAR contractor and the FOS contractor as part of the performance evaluation planning and award fee determination process. Performance Evaluation Plans are developed for TAR contractor and FOS contractor activities. These plans constitute the criteria and procedures used to evaluate contractor performance and determine award fee. The objective of the award fee is to challenge the TAR and FOS contractors to achieve optimum performance against specified criteria. The specific work evaluated in the Performance Evaluation Plan is consistent with assigned task orders and reflect line management input. The Management and Administrative performance area establishes performance objectives, measures and expectations for ES&H. The TAR and the FOS contractors are expected to meet or exceed minimum performance standards.

Prioritize Tasks and Allocate Resources

DOE–GJO, determines prioritization of work. Draft task orders for each fiscal year are established by DOE–GJO and provided to the TAR and the FOS contractors for planning. After reviewing the scope of work and priorities established by DOE–GJO, line management teams determine the resources needed to complete the tasks in accordance with the task order. Hazard analysis and control are given high priority in the work planning and resource allocation portion of the planning process. Task scheduling and final resource allocation is established after the tasks plans are approved by DOE–GJO. Protecting workers, the public, and environment is always a priority consideration. DOE–GJO approved task orders are subsequently issued to the TAR contractor or FOS contractor and authorize the start of work.

3.2.2 Analyze Categorize Hazards

Identifying potential hazards and environmental impacts is a critical step to ensure hazards are adequately controlled. Clearly defining applicable ES&H requirements during this step is also important to ensure compliance. The TAR contractor and the FOS contractor manuals in the ES&H topical areas (e.g., environmental compliance, occupational safety and health, and radiation protection) provide detailed information on requirements and hazard and environmental impact analysis. Clear responsibilities and requirements for the process of hazard identification and analysis are documented throughout the GJO Health and Safety Standards (GJO 2) manual. This manual provides direction to ensure that hazard identification and analysis are performed, documented, and maintained.

Project safety plans (PSPs) serve as the primary working documents that synthesize the applicable health and safety requirements for a discreet scope of work or project. This document is the result of the process by which hazards are analyzed and categorized, requirements are identified, and controls proscribed. PSP requirements are further defined and stipulated in GJO Health and Safety Standards (GJO 2), Policy 1.1, Section 4.3 *Project Safety Plans.*

Identify and Analyze Hazards

The TAR contractor and the FOS contractor have a current and approved Safety Assessment document (P-GJPO-1216 dated June 1996). This safety assessment was produced in accordance with DOE Order 5481.1B, *Safety Analysis and Review System,* and DOE-AL Order 5481.1B, *Safety Analysis and Review System*. Safety assessment is a documented process (1) to provide systematic identification of hazards within a given DOE operation; (2) to describe and analyze the adequacy of measures taken to eliminate, control, or mitigate identified hazards; and (3) to analyze and evaluate potential accidents and their associated risks. A graded approach accounting for the magnitude of hazard, modifications, complexity of systems and structures, and life-cycle phases guided the required scope and detail of the Safety Assessment.

The Safety Assessment document provides a baseline for the identifications of the full range of hazards associated with the TAR contractor and the FOS contractor work scope. This document also provides for initial identification of hazards by location or subject that can help focus the project team during initial hazard evaluation.

Potential environmental impacts are analyzed through the National Environmental Policy Act (NEPA) process (e.g., impact statements, assessments, and categorical exclusions). NEPA actions are incorporated into schedules and budgets for all appropriate activities. Task order managers initiate the NEPA process when an action is first proposed, a task order is issued, or a change occurs in an existing task order. An Environmental Specialist evaluates the action to determine the level of NEPA review and impacts analysis required. The TAR contractor *Environmental Compliance Manual* (MAC-1001), Section 4.1, *"National Environmental Policy Act"* and the FOS contractor *Environmental Compliance Standards* (Manual FOS-202), Section 2.4, The "National Environmental Policy Act" establish responsibilities and processes for analyzing environmental impacts.

The TAR Contractor and the FOS Contractor perform job hazard analysis in accordance with the GJO Health and Safety Standards (Manual GJO 2), Section 2.8, Job Safety Analysis, *"Job Hazard Analysis, Risk Assessment, and Abatement Program"*. An enhanced work approach results from the use of a Job Safety Analysis (JSA) whereby line supervisors, workers, and health and safety (H&S) personnel work as a team to examine the work scope in detail. Line supervisors are responsible for the development and implementation of the JSA processes. The GJO Site Radiological Control Manual (Manual GJO 3), Chapter3, Part 1, *"Planning Radiological Work"* provides for the identification of radiological considerations in the early planning stages.

3.2.3 Develop and Implement Controls

Upon completion of the hazard analysis process, applicable regulatory, DOE, and contractor requirements are examined to determine appropriate levels of control. The controls are prescribed through numerous mechanisms including project safety plans, safe work permits, JSAs, and radiation work permits.

Identify Standards and Requirements

TAR contract DE-AC13-96GJ87335 and FOS contract DE-AC13-96GJ87460 establish the standards and requirements related to the GJO scope of work. These contracts also establish requirements based on federal safety, health, environmental and radiation protection laws and regulations; State regulations; Executive orders; DOE orders and guidance; and DOE Albuquerque Operations Office orders and guidance. Task orders are established under each of these contracts detailing scope, schedule, cost, and any addition or change to the standard contracts for the GJO contractors. The signing of these contracts and task orders serves as the DOE approval related to the standards and requirements that apply to the work scope.

Activities are evaluated and standards and requirements are reviewed to ensure that the controls established for the task are appropriately tailored to the hazards involved. GJO manuals, TAR and FOS contractor-specific manuals and desk instructions, project safety plans, and similar documents also identify requirements to ensure that work is performed safely

Identify Controls to Prevent/Mitigate Hazards

Identification of hierarchy of controls is as follows

1. Mitigation of identified hazards through engineering controls.

2. Application of administrative controls to reduce exposure.

3. Use of personnel protective equipment.

Specific controls are implemented through project specific health and safety plans, subcontracts, JSA's, and similar documents and processes. A graded approach is used to evaluate work scope for the purpose of identifying and controlling hazards. JSAs are created through the interaction of line management, health and safety personnel, and workers.

The JSA processes identify hazards in order to establish effective work controls that provide for safe performance of work. These processes are detailed in the GJO Health and Safety Standards (Manual GJO 2), Section 2.8, *"Job Safety Analysis, Job Hazard Analysis, Risk Assessment, and Abatement Program"*. Controls are tailored to the work being performed, depending on both the risk and the complexity of the work. The JSA processes determine if the work has been properly analyzed for both facility and task hazards and then ensures that the proper controls are identified. These controls help ensure that safety and health standards and requirements are met and hazards are appropriately addressed. The JSA process assists in identification of administrative procedures and controls, as well as special permits and supporting approvals needed before starting the work.

Line management ensures that a representative is assigned the duties of safety oversight and review of safety controls. Depending on the complexity of the operation and the scope of the task, a safety professional will work with line management to establish the necessary controls. Again, the graded approach is used to ensure the effective controls are identified and required in the design/work package.

Implement Controls

Hazard controls are implemented through the application of GJO manuals, TAR and FOS contractor-specific manuals and desk instructions, project safety plans, and specific remedial action procedures (when appropriate). The project manager is responsible for ensuring that the project team has chosen the proper mechanism to control the hazards that have been identified.

Hazardous conditions and activities are controlled in accordance with applicable safety regulations. GJO Construction Procedure Manual (Manual GJO 5), Section 5.4, *"Monitoring and Controlling Work Site Hazardous Conditions and Activities"*, provides the site supervisor with direction for monitoring and controlling hazardous conditions and activities that may occur after work startup. Direction is also provided to monitor and control those conditions that have not been identified in the preliminary hazard analysis or in a JSA. The site supervisor has overall authority and responsibility for monitoring, documenting, and verifying that measures to protect employees and others at the work site in accordance with identified requirements. ES&H personnel provide monitoring and early identification of any potential or existing hazardous conditions resulting from remedial action activities. The site supervisor also ensures that any hazardous condition has been eliminated or mitigated before any start of activities in the affected area. GJO Construction Procedures Manual (Manual GJO 5), Section 5.2, *"Job-Site Safety Inspections"*, requires periodic verification of hazard controls and barricades by construction inspectors.

TAR contractor and FOS contractor work includes a potential risk of radiation exposure. Radiation protection is ensured through compliance with applicable requirements, commitment to as low as reasonably achievable (ALARA) principles, and provision of a competent, professional radiation protection staff. This process is described in the GJO Site Radiological Control Manual (Manual GJO 3), Chapter 1, *"ALARA Program*". The regulations found in 10 CFR 835, "Occupational Radiation Protection", and the associated *Implementation Guide* are the foundations for all program elements. Both contractors perform all radiological work within the controls defined by their DOE headquarters (HQ) approved radiation protection program plans.

Radiation controls are established based upon workplace monitoring. Typical controls include personnel dosimetry, personnel protective equipment and clothing, area posting and access control, and worker training.

3.2.4 Perform Work within Controls

The TAR contractor and the FOS contractor work processes include confirming that ES&H controls are in place before beginning work and ensuring work is performed within those controls.

Confirm Readiness

Line managers conduct work readiness reviews (WRR) before beginning or restarting work on specific systems, projects, processes or activities. The need for a WWR is determined by line management and is tailored to the risk and complexity of the work to be performed. The formal WWR process is described in the GJO Quality Assurance Standards (Manual GJO 1), Criterion 1.8, *"Work Readiness Reviews"*. A less formal review process is described in Criterion QAI 1.5

of the same manual. Line management determines the appropriate level of review and associated documentation, based upon complexity and hazards associated with the work. The WRR is a multi disciplinary team based review that includes ES&H representation.

The formal WRR process culminates in a written report and an Approval Authority Notice that describes the results of the WRR and provides an assessment of the readiness to start work. The WRR report and an Approval Authority Notice often are not issued until open items have been satisfactorily addressed and the work can be deemed ready to proceed. When open items exist that preclude the start of work, they are resolved and the resolution verified by the WRR chair or a subset of the WRR team before work proceeds.

The GJO Site Radiological Control Manual (Manual GJO 3), Chapter 3, Part 2, "*Work Preparation*", requires pre-job briefings for work that might exceed defined radiological trigger levels. Pre-job briefings address items such as the scope of work to be performed and radiological conditions, procedures and radiation work permit requirements, radiological control hold points, communication and coordination with other groups, and emergency response provisions. The work supervisor is responsible for conducting the pre-job briefing, during which workers and other supervisors directly participate.

The GJO Construction Procedures Manual, (Manual GJO 5), Section 3.2, "*Pre-construction conference*", defines requirements for determining readiness prior to initiating a new construction project. This conference typically includes key personnel from line management, ES&H, technical support, and subcontractors.

Daily "tailgate" meetings are conducted at the job site to review safety and environmental considerations of the day's activities. The GJO Construction Procedures Manual (Manual GJO 5), Section 5.0, *"Project Control"*, establishes comprehensive job-site control and oversight responsibilities.

Execute Work

The GJO Quality Assurance Standards (Manual GJO 1), Criterion 5, *"Work Processes"*, contains requirements for performing work. Work is performed under controlled conditions by using technical standards, written procedures and instructions, or other appropriate means commensurate with the complexity and risk of the work. Work-related instructions, procedures, and other forms of direction are developed, verified, validated, and approved by technically competent personnel (Manual GJO 1, Criterion 5, QAI 5.1). These instructions and procedures incorporate controls needed to prevent hazards and mitigate potential environmental impacts. TAR Contractor and FOS Contractor organizations develop appropriate procedures and instructions for the control of their activities and processes. Where existing controls are inadequate or inappropriate to an organization's work, instructions and procedures are developed, documented, approved, and implemented before start of the work. Development and issuance of new or revised instructions, procedures, or drawings must be timely to allow for implementation and training before the start of work. Organizations that perform testing either develop procedures or adopt existing procedures for controlling test processes (Manual GJO 1, Criterion 5, QAI 5.3).

TAR contractor and FOS contractor line managers are responsible and accountable for identifying needed procedures and instructions and ensuring they adequately describe the work, ensuring that workers are trained in the use of the procedures and instructions, and ensuring that workers comply with the procedures and instructions. Workers are responsible for conducting work in accordance with established procedures and are responsible for reporting concerns related to safety. The GJO Construction Procedures Manual (Manual GJO 5) Section 5.0, "*Project Control*" provides additional detail regarding the performance of remedial action construction. This manual establishes a set of clear and complete remedial action construction-operating procedures that encourage safe, efficient performance and comply with environmental, safety, health, and quality requirements.

All employees have "stop work" authority. Employees may decline to perform an assigned task because of a reasonable belief that the task poses an imminent risk of death or serious bodily harm and there is insufficient time to seek effective redress through normal hazard reporting and abatement processes (GJO Health and Safety Standards Manual [Manual GJO 2], Section 1.1, "*Health and Safety Protection*"). Any worker, through his or her supervisor, also has the authority and responsibility to stop radiological work activities for inadequate radiological controls, lack of controls implementation, or a radiological hold point not being satisfied (GJO Site Radiological Control Manual, [Manual GJO 3] Chapter 3, Part 4, "*Radiological Work Controls"*).

GJO Emergency Preparedness and Response Plan (GJO Manual 8) identifies responsibilities, workforce, and equipment available to cope with industrial, chemical, radiological, natural, public-disturbance, and enemy-attack emergencies.

3.2.5 Provide Feedback and Improvement

The TAR contractor and the FOS contractor have established and implemented processes to detect and prevent quality problems and to ensure quality improvement. The GJO Quality Assurance Standards (Manual GJO 1), Criterion 3, *"Quality Improvement"*, provides the

guidance and implementing mechanisms that include trend analysis, planning, root cause analysis, performance goals and objectives, nonconformance reporting, corrective actions, management walkdowns, hot lines, strategic planning, assessments and appraisals, value engineering, process reviews, and management reviews.

Collect Feedback Information

The primary mechanism for assessing and measuring performances is the Performance Expectation Plan (PEP). The performance indicators serve as feedback for measurement of ES&H performance.

Management assessment is another mechanism to receive feedback from all parts of the organization. The GJO Quality Assurance Standards (Manual GJO 1), Criterion 9, "*Management Assessment*" establishes the requirements for performing management reviews and assessments to address planning and the adequacy of work or the effectiveness of the management system and process. This criterion requires line organizations to perform and document periodic management assessments that focus on the effectiveness of the management systems. Assessments are used to identify and correct deficiencies and to coach employees as necessary to make process improvements. Results of the assessments may be entered into the TAR contractor and the FOS contractor Commitment Tracking and Management System (CTMS) as applicable (GJO Quality Assurance Standard, GJO 1, Appendix B, *"Contractor Commitment Tracking and Management System"*).

TAR and FOS contractors also apply a process of planned and scheduled independent assessments in accordance with the GJO Quality Assurance Standards (Manual GJO 1), Section Criterion 10, *"Independent Assessment"*. These assessments focus on improving management systems and processes and are scheduled and planned by the appropriate QA management. Assessment results may be tracked in CTMS and resolved by management personnel who have Quality Assurance responsibility in the area assessed.
Unplanned events and conditions are processed in accordance with the GJO Health and Safety Standards (Manual GJO 2), Chapter 4, *"Investigation and Reporting of Off-Normal Occurrences"*. This document specifies the TAR contractor and the FOS contractor personnel responsible for notification, reporting, investigation, and processing of unplanned events or conditions. Additionally, Chapter 4.4 "*Reporting and Resolving Safety Concern*" defines worker responsibilities and methods for informing management of adverse safety conditions.

Environmental oversight is conducted by the TAR contractor and FOS contractor in accordance with the TAR contractor *Environmental Compliance Manual* (MAC-1001), Section 6.5, *"Inspections"* and the FOS contractor *Environmental Compliance Standards Manual* (Manual FOS-202), Chapter 1, Section 1.1, *"Environmental Compliance"*.

Routine project field inspections on major projects are conducted by line management and include a detailed safety inspection as described in GJO Construction Procedure Manual (Manual GJO 5), Section 5.2, *"Job Site Safety Inspections"*. Detailed forms in this section provide a checklist and documentation mechanism.

The GJO Health and Safety Standards (Manual GJO 2) Chapter 1.1, *"Health and Safety Protection"*, requires that all personnel report to management, any injury, illness or near miss related to work.

Identify Improvement Opportunities

Mechanisms to disseminate both positive and negative lessons learned related to GJO are contained in GJO Quality Assurance Standards (Manual GJO 1), Section QAI 3.3, "*Dissemination of Lessons Learned*". This process allows the contractor to learn from past activities, to help improve performance, and prevent repeat safety-related occurrences. The focus of this process is to identify weaknesses in the systems that allowed an incident to occur and provide other personnel with the guidance to work safer.

The mechanism used by larger projects to provide feedback and improvement is available in the GJO Construction Procedure Manual (Manual GJO 5), Section 5.3, *"Project Reviews and Lessons Learned"*. This section identifies the process for conducting project closeout reviews by the project team. These reviews address health and safety issues, such as biological hazards, chemical hazards, respiratory protection, personnel protective equipment (PPE), and means of egress. Also evaluated and included are other environmental issues such as compliance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, hazardous waste compliance, regulatory practice, and site characterization. Results of this review are shared with other projects and may be entered into the CTMS if deemed necessary.

Lessons learned from other DOE sites are screened for applicability and distributed as appropriate for inclusion in upcoming safety meetings and safety reviews.

The TAR contractor and the FOS contractor managers and supervisors promote a work environment that encourages identification and communication of opportunities for improvement. Managers ensure that workers understand the need for system feedback and improvement and that the workers are equipped with the necessary process to support and promote this effort. Workers are empowered and expected to provide constructive feedback concerning ES&H and quality issues and performance improvements to management. Line management is responsible for acting on this feedback from the employees.

Mechanisms for reporting safety issues are available in the GJO Health and Safety Standards (Manual GJO 2), Policy 4.2, *"Notification of Unplanned Events*". This policy also requires employees to report all safety violations, unsafe conditions, and other safety related concerns promptly to line management. If investigations are performed, the employees are required to complete part 1 of the Safety Report (GJPO 1743). This report is part of the formal processing of learning from events and making improvements to prevent reoccurrence.

The TAR contractor and the FOS contractor also maintain a confidential Safety and Environmental Hotline to receive potential issues from employees. These concerns can be addressed at the GJO or Albuquerque Operation Office (AL) level. Employees can also report issues to DOE-AL using the Associates' Concerns Reporting Form (AL F 5480.29) and mailing it to DOE-AL.

The TAR contractor and the FOS contractor receive feedback regarding deficiencies in safety, environmental, and health performance from various external oversight organizations.

Make Changes to Improve

The interaction between workers and line management promotes continuous improvement that contributes significantly to raising quality in the areas of both work performance and compliance. The primary elements of the continuous improvement process are incorporation of lessons learned from past experiences and responses to the results of self-assessments and audits. The continuous improvement process is how both the TAR and FOS contractors continually strive for maximum efficiencies and returns.

A corrective action process has been established that incorporates the results of self-assessments, external audits, and nonconformance reports. The corrective action process identifies specific and generic actions necessary to eliminate deficiencies and improvements to preclude the recurrence of deficiencies. The GJO Quality Assurance Standards (Manual GJO 1), Appendix B, *"Contractor Commitment Tracking and Management System"*, assigns responsibilities and provides instruction for the control and processing of documented deficiencies. The CTMS is used to monitor deficiencies and corrective actions. Actions listed in this system are assigned to a responsible line manager along with a target completion date. Actions with broader significance are elevated to senior management for input and direction. Changes and improvements to work processes are communicated via the Lessons Learned program, training and worker briefings. CTMS is managed by the Quality Assurance organization and provides detailed monthly reports to management. This system provides feedback on the status of environmental and safety deficiencies, and corrective actions.

The ISMS is updated annually and a report addressing changes prepared. The annual update report addresses effectiveness of safety performance objectives, measures and commitments; information from the feedback and improvement mechanisms described above; current DOE program and budget execution guidance and direction; and changes to laws, regulations, and directives. As needed, this description is revised to reflect the updates. The schedule for revising the Description is established with the DOE contracting officer.

3.3 ISMS Implementing Mechanisms

Table 2 presents the ISMS implementing mechanisms discussed in the core functions sections. This table provides the key mechanisms that ensure implementation of the TAR contractor and FOS contractor ISMS. The ISMS guiding principles and core functions are further reflected and implemented in many other portions of the GJO manuals and specific TAR and FOS contractor manuals, and project documents.

Table 2. TAR and FOS Contract ISMS Core Function Mechanisms

Define Scope of Work	Analyze Hazards	Develop Controls	Perform Work	Feedback and Improvement
TAR contract DE-AC13-96GJ87335 FOS contract DE-AC13-96GJ87460 Task Orders *GJO Quality Assurance Standards*, Section QAI 1.5, "*Administrative and Technical Planning"* TAR Contractor *Project Management Control System (MAC 1002)* FOS Contractor *Project Management and Controls Procedure Manual*	Safety Assessment Document (P-GJPO-1216) TAR contractor *Environmental Compliance Manual*, Section 4.1, "*National Environmental Policy Act*" FOS contractor *Environmental Compliance Standards*, Section 2.4, "*The National Environmental Policy Act*" *GJO Health and Safety Standards* (GJO 2), Section 2.8, "*Job Safety Analysis, Job Hazard Analysis, Risk Assessment, and Abatement Program*" *GJO Site Radiological Control Manual*, Chapter3, Part 1, "*Planning Radiological Work*"	TAR contract DE-AC13-96GJ87335 FOS contract DE-AC13-96GJ87460 *GJO Health and Safety Standards Manual*, Chapter 2, "*Industrial Hygiene*" *GJO Site Radiological Control Manual*, Chapter 1, Article 138, "*ALARA Program*" *GJO Health and Safety Standards Manual*, Section 2.8, "*Job Safety Analysis, Job Hazard Analysis, Risk Assessment, and Abatement Program"* *GJO Construction Procedure Manual*, Section 5.4, "*Monitoring and Controlling Work Site Hazardous Conditions and Activities*" *GJO Construction Procedure Manual*, Section 5.2, "*Job-Site Safety Inspections*"	*GJO Quality Assurance Standards*, Criterion 5, "*Work Processes*" *GJO Site Radiological Control Manual*, Chapter 3, Part 2, "*Work Preparation*" *GJO Construction Procedures Manual*, Section 5.0, "*Project Control*" and Section 3.2, "*Preconstruction Conference*" *GJO Health and Safety Standards*, Section 1.1, "*Health and Safety Protection*" *GJO Site Radiological Control Manual*, Chapter 3, Part 4, "*Radiological Work Controls*" *GJO Emergency Preparedness and Response Plan* *GJO Quality Assurance Standards*, Section QAI 1.8, "*Work Readiness Reviews*" *GJO Quality Assurance Standards*, Section QAI 1.5 "*Technical Planning*"	*GJO Quality Assurance Standards*, Criterion 3, "*Quality Improvement*" *GJO Quality Assurance Standards*, Criterion 9, "*Management Assessment*" *GJO Quality Assurance Standards*, Appendix B, "*Contractor Commitment Tracking and Management System*" *GJO Quality Assurance Standards*, Section Criterion 10, "*Independent Assessment*" *GJO Health and Safety Standards*, Chapter 4, "*Investigation and Reporting of Off-Normal Occurrences*" TAR contractor *Environmental Compliance Manual*, Section 6.5, "*Inspections*"

Table 2. TAR and FOS Contract ISMS Core Function Mechanisms (continued)

Define Scope of Work	Analyze Hazards	Develop Controls	Perform Work	Feedback and Improvement
			***GJO Quality Assurance Standards*, Section QAI 5.1 "*Preparation of Instructions, Procedures and Drawings*"** ***GJO Quality Assurance Standards*, Section QAI 5.3 "*Test Control*"**	**FOS contractor *Environmental Compliance Standards*, Chapter 1, Section 1.1, "*Environmental Compliance*"** ***GJO Construction Procedure Manual*, Section 5.2, "*Job Site Safety Inspections*"** ***GJO Quality Assurance Standards*, Section QAI 3.3, "*Dissemination of Lessons Learned*"** ***GJO Construction Procedure Manual*, Section 5.3, "*Project Reviews and Lessons Learned*"** ***GJO Health and Safety Standards (GLO 2),* Policy 4.2, *"Notification of Unplanned Events" and Policy 1.1 "Health and Safety Protection"***

4.0 Conclusions

The GJO TAR contractor and FOS contractor are committed to safe, environmentally protective, technically sound, cost-effective operations. Implementation of the TAR contractor and the FOS contractor ISMS ensures this commitment is fulfilled. The TAR contractor and FOS contractor ISMS is implemented at the highest level through existing GJO manuals. The TAR contractor and FOS contractor enhance implementation through more specific documents, such as manuals, plans, procedures, and desk instructions. The ISMS is applied on a graded approach depending on the risk and complexity of the activity. TAR contractor and FOS contractor line management are responsible for worker, public, and environmental protection and recognize the importance of ensuring that all work is performed safely.

The identification, analysis, and control of hazards and the use of feedback mechanisms for continuous improvement in defining planning, and performing work are critical to effective ISMS implementation. The effectiveness of implementation will be gauged through site metric and performance expectations.

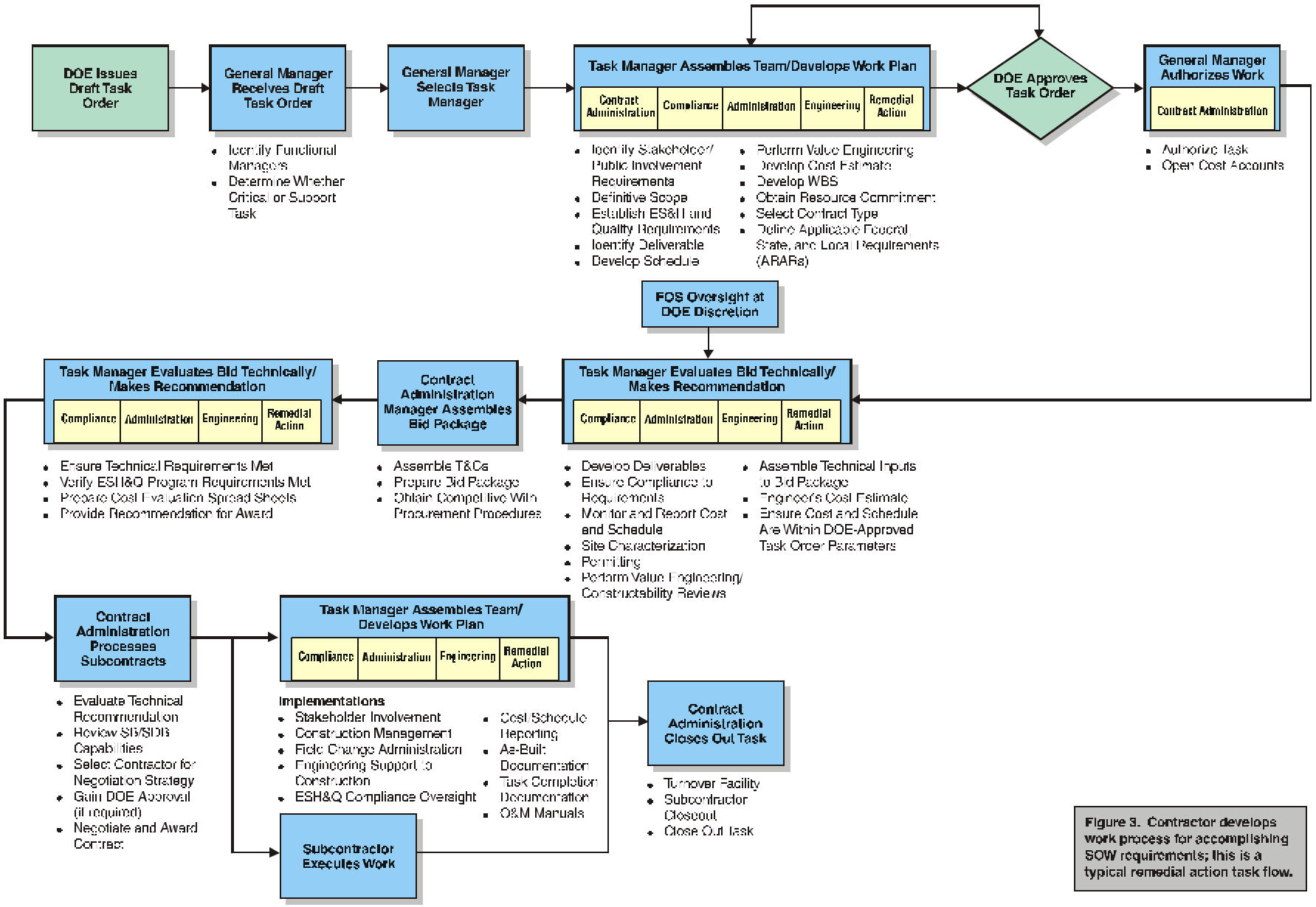

Figure 3. Contractor develops work process for accomplishing SOW requirements; this is a typical remedial action task flow.